

## Amendments to the Claims:

The following listing will replace all prior listing of claims in the application.

## Listing of Claims:

### CLAIMS

1. (Currently amended) ~~Method~~ A method of fabricating a mixed substrate wherein:

[[\*]] ~~providing~~ two substrates are prepared ~~each~~ having respective faces adapted to be bonded together, ~~and consisting essentially at these~~ the faces of ~~having~~ crystalline portions and, ~~wherein~~ on at least one of these two ~~the~~ faces, ~~includes~~ regions formed of a material different from those constituting the crystalline portions;

[[\*]] ~~positioning~~ these ~~the~~ faces are offered up face-to-face and are joined ~~joining the faces~~ at an interface by molecular bonding to form bulk regions, in which the facing faces are essentially substantially crystalline, and stacked regions, in which at least one of the facing faces ~~essentially consists of~~ includes regions of a different material; ~~and~~

[[\*]] ~~heat treatment is effected~~ heating to consolidate the bonding bond, characterized in that ~~wherein~~, during one of the preparation of providing the first and second substrates (10, 12; 20, 22; 40, 42; 60, 62) or during the joining of the faces, impurity traps are created at said ~~the~~ interface, (11A, 21A, 41A, 61A) such that any portion of that ~~the~~ interface forming part of at a bulk region is ~~at most at~~ within a given predetermined distance from a trap, ~~and wherein~~ the misalignment ~~while the faces are offered up face-to-face with a misalignment between the crystalline portions~~ when positioning the faces of these two substrates is below less than a given predetermined misalignment threshold.

2. (Currently amended) ~~Method~~ The method according to claim 1, characterized in that ~~wherein~~ the regions formed of a different material are comprise electrically insulative layers.

3. (Currently amended) ~~Method~~ The method according to claim 1 or claim 2, characterized in that ~~wherein~~ the regions formed of a different material are comprise localized oxide layers.

4. (Currently amended) ~~Method~~ The method according to claim 1, characterized in that wherein the traps are comprise localized buried layers.

5. (Currently amended) ~~Method~~ The method according to claim 1, characterized in that wherein the traps are localized oxide layers.

6. (Currently amended) ~~Method~~ The method according to claim 1, characterized in that wherein these layers the regions of a different material have a thickness ~~from~~ of approximately 0.01 microns to approximately 3 microns.

7. (Currently amended) ~~Method~~ The method according to claim 1, characterized in that wherein the regions of a different material comprise localized oxide layers are prepared by thermal oxidation ~~through~~ using a mask.

8. (Currently amended) ~~Method~~ The method according to claim 1, characterized in that wherein the regions of a different material comprise localized oxide layers are prepared by deposition ~~through~~ using a mask.

9. (Currently amended) ~~Method~~ The method according to claim 1, characterized in that preparation wherein providing two substrates further includes a step of treating the faces to render them hydrophobic.

10. (Currently amended) ~~Method~~ A method according to claim 1, characterized in that wherein the given predetermined misalignment threshold is  $\pm 6^\circ$  in rotation and  $\pm 1^\circ$  in bending.

11. (Currently amended) ~~Method~~ The method according to claim 1, characterized in that wherein the method further comprises:

etching one of the faces ~~is etched~~ using a mask with patterns that are not farther apart than the given predetermined distance;<sub>i</sub>

generating an oxide layer (11, 41) ~~is then generated on this~~ the one face;<sub>i</sub>

planarizing the one face ~~is planarized~~ to expose the non-etched regions (Z2, Z2''); and

cleaning the one ~~this face is cleaned~~ to render it hydrophobic.

12. (Currently amended) ~~Method~~ The method according to claim 1, characterized in that wherein preparation includes a step of treating the faces to render them hydrophilic.

13. (Currently amended) ~~Method~~ The method according to claim 1, characterized in that wherein the given misalignment threshold is  $\pm 1^\circ$  in rotation and in bending.

14. (Currently amended) ~~Method~~ The method according to claim 1, characterized in that wherein the method further comprises one of the faces with forming an oxide layer on one of the faces and etching the an oxide layer and the one face is etched using a mask with patterns that are not farther apart than the given predetermined distance, and forming a thermal oxide layer (21, 61) is generated on this the one face, and planarizing the one face is planarized to expose the non-etched regions of the one face (Z2', Z2''), and cleaning the one this face is cleaned to render it hydrophilic.

15. (Currently amended) ~~Method~~ The method according to claim 1, characterized in that wherein each providing two substrates having crystalline portions portion is made from comprises providing a material selected from the group comprising Si, InP, AsGa, Ge, compounds of silicon, silicon-germanium, LiNbO3, III-V compounds, SiC, diamond, sapphire, piezoelectric materials, and pyroelectric materials.

16. (Currently amended) ~~Method~~ The method according to claim 1, characterized in that wherein each providing two substrates having crystalline portions portion is of comprises providing silicon.

17. (Currently amended) ~~Method~~ The method according to claim 1, characterized in that wherein heating to consolidate the bond comprises carrying out a heat treatment lasts a few up to 3 hours at a temperature from 800°C to 1400°C, and wherein the given predetermined distance is of the order of about one millimeter.

18. (Currently amended) ~~Method~~ The method according to claim 1, characterized in that further comprising treating the faces adapted to form the interface

are treated by deoxidation with HF to remove oxides from the faces prior to positioning the faces.

19. (Currently amended) ~~Method~~ The method according to claim 1,  
characterized in that further comprising heat treating the faces adapted to form the interface are heat treated prior to positioning the faces.

20. (Currently amended) ~~Method~~ The method according to claim 1,  
characterized in that further comprising polishing the faces adapted to form the interface are treated by chemical mechanical polishing prior to positioning the faces.

21. (Currently amended) ~~Method~~ The method according to claim 1,  
characterized in that further comprising plasma treating the faces adapted to form the interface are plasma treated prior to positioning the faces.

22. (Currently amended) ~~Method~~ The method according to claim 1,  
characterized in that further comprising chemically treating the faces adapted to form the interface are chemically treated prior to positioning the faces.

23. (Currently amended) ~~Method~~ The method according to claim 1,  
characterized in that further comprising applying a thinning treatment is applied to one of the two substrates.

24. (Currently amended) ~~Method~~ The method according to claim 1,  
characterized in that further comprising thinning one of the substrates is thinned by a chemical mechanical abrasion treatment.

25. (Currently amended) ~~Method~~ The method according to claim 1,  
characterized in that further comprising preparing one of the substrates is prepared so that it is demountable and, wherein the method further comprises a subsequent step consists in comprising demounting this the one substrate.

26. (Currently amended) ~~Method~~ The method according to claim 1,  
characterized in that further comprising thinning one of the two substrates is thinned by

producing a fragile layer (22A) in the one substrate and by fracturing this the fragile layer.

27. (Currently amended) ~~Method~~ The method according to claim 1, characterized in that wherein providing substrates having the crystalline portions of the comprises providing two substrates are prepared from the same crystal.

28. (Currently amended) ~~Method~~ The method according to claim 1, characterized in that wherein the providing two substrates comprises preparing the substrates are prepared by producing a fragile layer (30A, 50A) in the same a source crystal (30, 50), placing markers (32, 52) on either side of this the fragile layer, and causing a fracture in this fracturing the fragile layer to create two free faces, and wherein positioning the faces comprises forming the interface with the stacked regions and the impurity traps is made by bringing these the faces into contact after lining up said the markers.

29. (Currently amended) ~~Method~~ The method according to claim 4 28, characterized in that wherein producing a this fragile layer (30A, 50A) is formed by comprises ionic ion implantation.

30. (Currently amended) ~~Method~~ The method according to claim 4 28, characterized in that wherein producing a this fragile layer is formed by comprises implanting hydrogen ions.

31. (Currently amended) ~~Method~~ The method according to claim 4 28, characterized in that wherein the placing markers are formed comprises forming the markers within the thickness of the source crystal and on either side of the fragile layer.

32. (Currently amended) A structure ~~Structure~~ including comprising two substrates including an interface obtained by molecular bonding of two respective faces of the two substrates, ~~these the two~~ substrates including crystalline portions having on either side of the interface a misalignment of less than  $\pm 6^\circ$  in rotation and less than  $\pm 1^\circ$  in bending and further including stacked regions at this the interface, the stacked regions; including at least one localized region ~~essentially consisting of a material~~

different from ~~those constituting the crystalline portions, and where applicable further including~~ impurity traps at the interface such that any portion of the interface away from the stacked regions is ~~at most at a given~~ within a predetermined distance from a stacked region or a an impurity trap.

33. (Currently amended) The structure ~~Structure~~ according to claim 32, characterized in that wherein the given predetermined distance is ~~of the order of~~ about one millimeter.

34. (Currently amended) The structure ~~Structure~~ according to claim 32 ~~or claim 33~~, characterized in that wherein the crystals crystalline portions ~~are of~~ comprise silicon.

35. (Currently amended) The structure ~~Structure~~ according to ~~any one of claims claim~~ 32 to 34, characterized in that wherein the impurity traps are comprise localized buried layers.

36. (Currently amended) The structure ~~Structure~~ according to claim 35, characterized in that wherein the impurity traps are comprise localized oxide layers.

37. (Currently amended) The structure ~~Structure~~ according to ~~any one of claims claim~~ 32 to 36, characterized in that wherein the stacked regions ~~essentially consisting of a different material are~~ comprise electrically insulative regions.

38. (Currently amended) The structure ~~Structure~~ according to ~~any one of claims claim~~ 32 to 37, characterized in that wherein the stacked regions ~~essentially consisting of a different material are~~ comprise localized oxide layers.